

Features

- The plastic package carries UL Flammability Classification 94V-0
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals


Mechanical Characteristics

- Case: SMC(DO-214AB) package molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0088 ounce, 0.25 grams

Absolute Maximum Ratings and Electrical Parameters (TA=25°C unless otherwise specified)

PARAMETER	SYMBOL	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V	
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{AV}	3							A	
Peak forward surge current	I_{FSM}	100							A	
Maximum instantaneous forward voltage at 3A	V_F	0.95					1.25	1.7	V	
Maximum DC reverse current at rated DC blocking voltage	$T_A=25^\circ\text{C}$	I_R	5							μA
	$T_A=100^\circ\text{C}$	I_{RT}	50							μA
Maximum reverse recovery time ^(NOTE 1)	t_{rr}	35							ns	
Typical junction capacitance ^(NOTE 2)	C_J	45							pF	
Typical Thermal Resistance Junction to Ambient ^(NOTE 3)	$R_{\theta JA}$	55							$^\circ\text{C}/\text{W}$	
Typical Thermal Resistance Junction to Lead ^(NOTE 3)	$R_{\theta JL}$	15							$^\circ\text{C}/\text{W}$	
Operating Temperature Range	T_J	-55 to 150							$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-55 to 150							$^\circ\text{C}$	

Note1: Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$

Note2: Measured at 1MHz and applied reverse voltage of 4.0V DC.

Note3: PCB. mounted with 16×16mm copper pad areas

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SMC	Tape/Reel, 13" reel	3000	EIA-481-1
	Tape/Reel, 7" reel	500	EIA-481-1

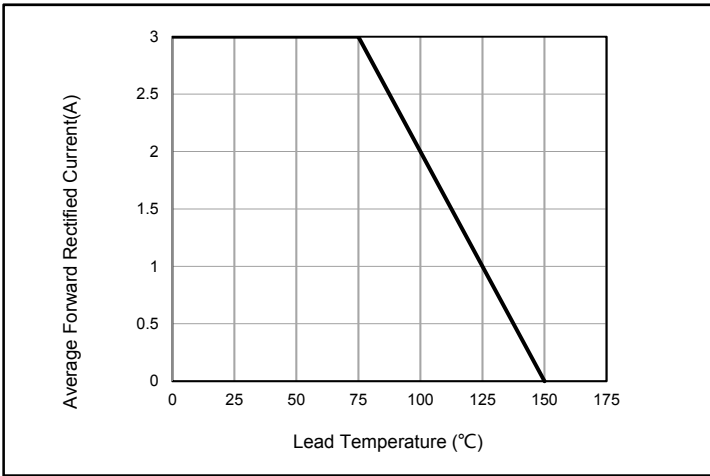


Fig. 1 - Forward Current Derating Curve

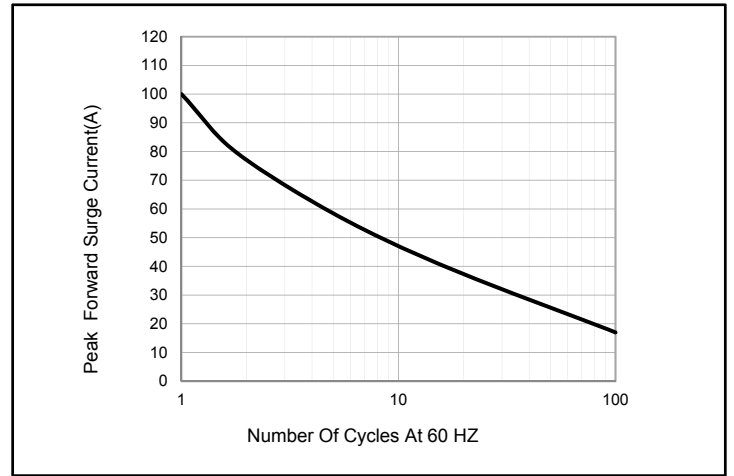


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

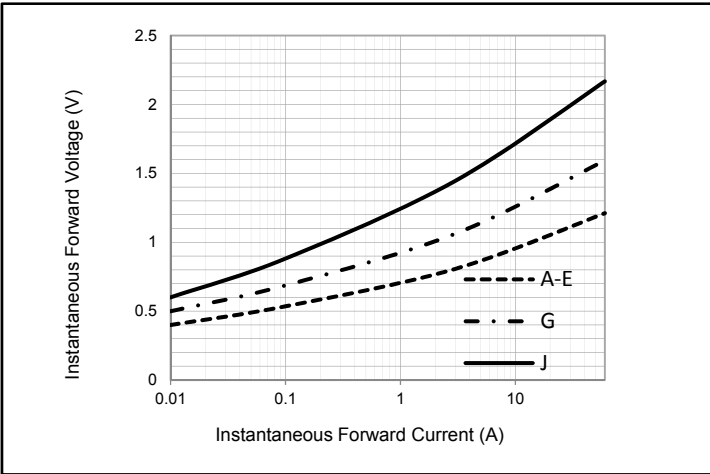


Fig. 3 - Typical Instantaneous Forward Characteristics

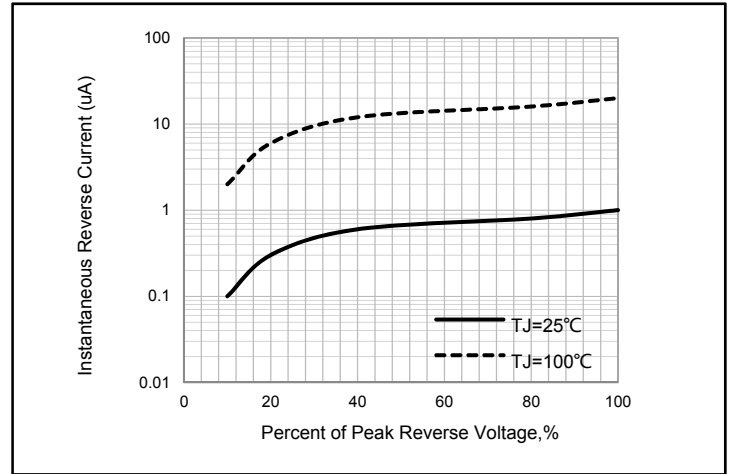


Fig. 4 - Typical Reverse Characteristics

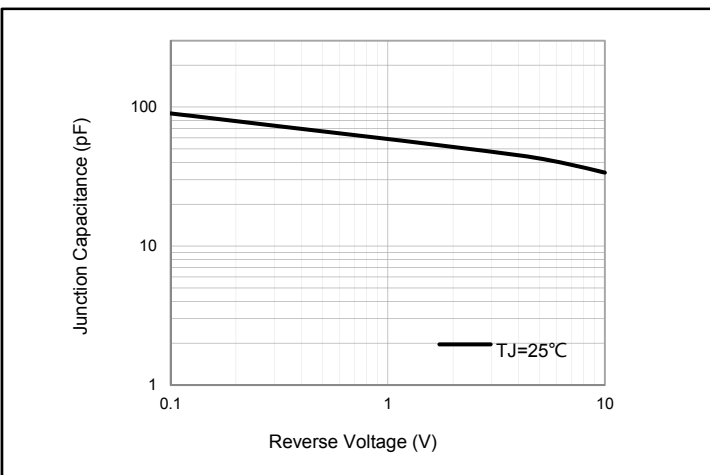


Fig. 5 - Typical Junction Capacitance

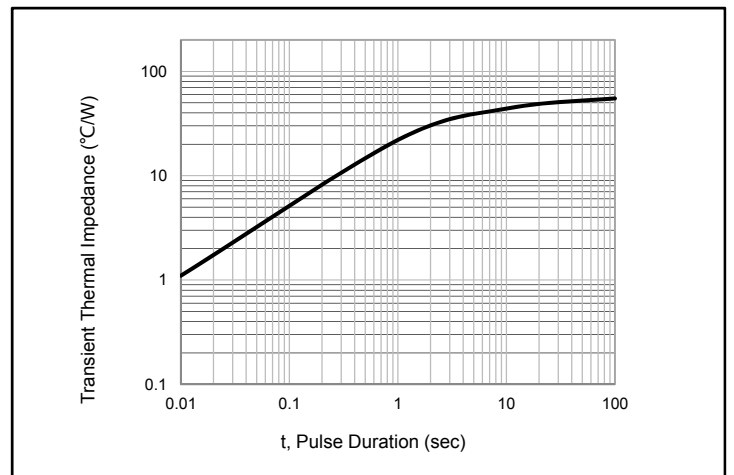
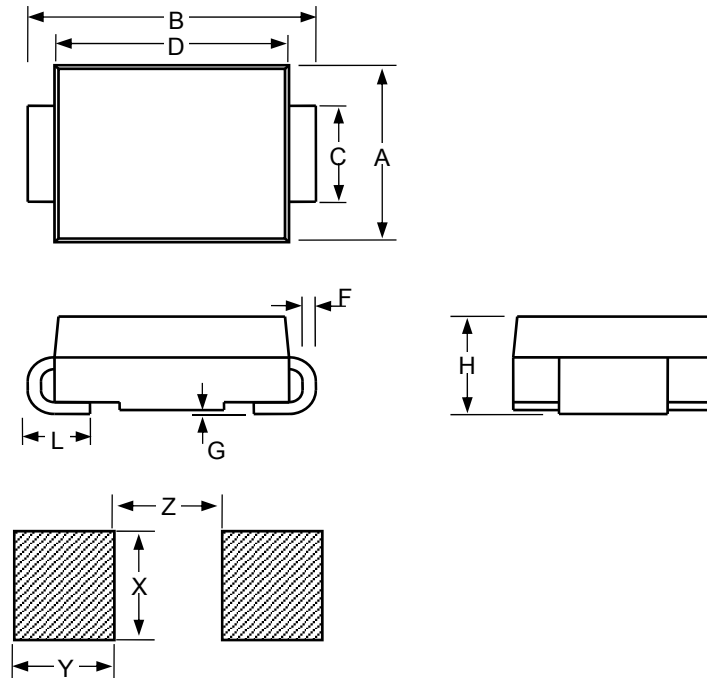
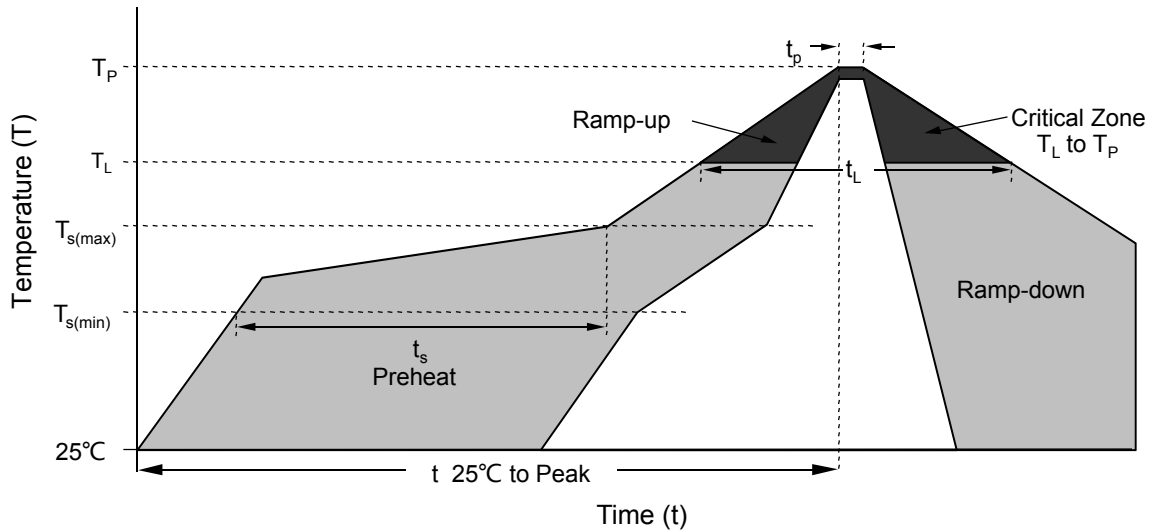


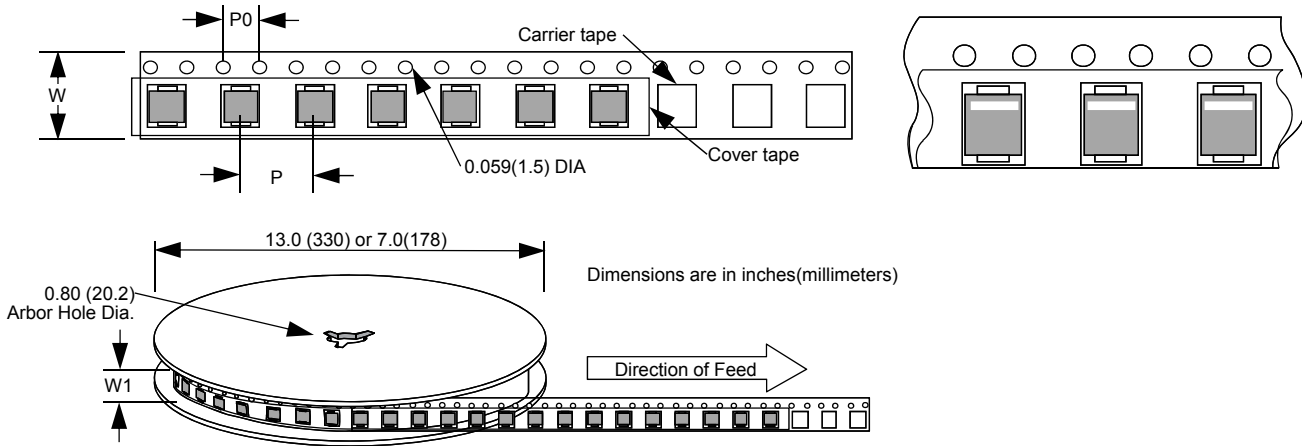
Fig. 6 - Typical Transient Thermal Impedance



SMC						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.22		0.245	5.59		6.22
B	0.305		0.32	7.75		8.13
C	0.114		0.126	2.9		3.2
D	0.26		0.28	6.6		7.11
L	0.03		0.06	0.76		1.52
F	0.006		0.012	0.15		0.305
G	-		0.008	-		0.203
H	0.087		0.11	2.2		2.8
X		0.15			3.82	
Y		0.119			3.03	
Z		0.151			3.84	



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

Tape and Reel Specification


Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.315			8	
P0		0.157			4	
W		0.63			16	
W1		0.646			16.4	

Disclaimer

This document is for reference only, data sheet specifications and its information contained are intended to provide a product description only. Yfsemi Microelectronics Stock Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices). Customers using or selling Yfsemi components for use in such applications do so at their own risk and shall agree to fully indemnify Yfsemi and its subsidiaries harmless against all claims, damages and expenditures.

For additional information, please visit our website <http://www.yfsemi.com>